BURLINGTON ENVIRONMENTAL

January 14, 1994

CERTIFIED MAIL



Mr. David Croxton
U.S. EPA
1200 Sixth Avenue, M/S HW-106
Seattle, WA 98101

Mr. Croxton:

Enclosed is a request for variance from the Burlington Environmental Inc. Pier 91 Facility RFI Work Plan for the installation of dedicated sampling equipment in all monitoring wells.

The dedicated equipment is scheduled to be installed January 21, 1994 and will take approximately two days. The next quarterly goundwater sampling event will begin January 27th. The monthly water level measurements will be take prior to initiating the quarterly sampling.

If you have any questions please contact me at (206) 654-8153.

Sincerely,

John Stiller
Project Coordinator

cc: Galen Tritt - Ecology NWRO



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# REQUEST FOR VARIANCE FROM BURLINGTON PIER 91 RFI WORK PLAN

January 14, 1994

## INTRODUCTION

Burlington Environmental Inc. (Burlington) requests a variance from the Burlington Pier 91 RCRA Facility Investigation (RFI) Work Plan to modify the purging and sampling techniques presently being used for quarterly groundwater monitoring at the Pier 91 facility. In an effort to collect more consistent data, as well as improve the cost efficiency of quarterly monitoring, Burlington is proposing to install dedicated sampling equipment in all Burlington owned monitoring wells at the Pier 91 facility. In addition, Burlington is proposing to modify the purging procedure, adopting low flow purging and sampling techniques combined with parameter stabilization as opposed to a predetermined well volume method. Well sampling will be accomplished at low flow rates directly from the pump discharge.

## DEDICATED SAMPLING EQUIPMENT

Dedicated Grundfos Rediflow II sampling pumps will be installed in all wells not containing floating product. The pump intake will be placed at the center point of the well screen. In monitoring wells that are constructed so that the well screen intercepts the water table, the pump intake will be placed a minimum of five feet below the average low water level.

Dedicated stilling tubes will be installed in monitoring wells containing floating product, and groundwater samples will be collected through these stilling tubes. The purpose of the stilling tube is to sample only the groundwater and prevent floating product from entering the sampling pump. A peristaltic pump will be used to sample the inorganic and semi-volatile organic parameters, while a dedicated Teflon bailer will be used to sample volatile organic constituents.

## IMMISCIBLE LAYER DETECTION

The approved Pier 91 RFI Work Plan requires monitoring for both light non-aqueous phase liquids (LNAPLs) and dense non-aqueous phase liquids (DNAPLs) prior to sampling each well. LNAPLs will continue to be monitored each sampling event using an electric oil-water interface probe. However, DNAPLs have not been detected during quarterly monitoring. With the installation of the dedicated sampling pumps, monitoring for DNAPLs will first require removing the sampling pumps. Because DNAPLs have not been detected at the site to date, Burlington proposes to monitor for DNAPLs once a year at a time agreed upon by Burlington and EPA. For those sampling events when the pumps are not removed, the purge water will be monitored for the presence of DNAPLs. When the pumps are removed to monitor DNAPLs, the pump and discharge hose will be placed in a clean plastic drum liner and immediately reinstalled in the well after monitoring.

WELL PURGING

Monitoring wells outfitted with dedicated pumps will be purged using the sampling pumps. Wells with dedicated stilling tubes will be purged using a peristaltic pump. The purging procedure will conform to the RCRA Groundwater Monitoring Draft Technical Guidance (EPA, 1992). Each well will be purged at a low flow rate that prevents lowering the water levels. This procedure prevents mixing the stagnant water above the well screen with the fresh water entering the well screen. Low purging rates also prevent high well screen entrance velocities that can alter the concentration of dissolved volatile organic compounds in the groundwater. If the recharge rate for a well is too low to prevent significantly lowering the water level, the well will be purged dry and then sampled. The water level will be monitored during purging with an electronic water level indicator to ensure the purge rate is not lowering the water level.

A minimum of one well volume of water will be purged from each well. Turbidity, redox potential, and dissolved oxygen of the purge water will be measured using a in-line flow cell. After one well volume has been purged, purging will continue until these three parameters have stabilized within 10% over two successive measurements. Measurements will be collected at three minute intervals after initiation of the purging.

GROUNDWATER SAMPLING

Groundwater samples will be collected using the same dedicated pump that was used to purge the well. Samples will be collected directly from the pump discharge without interrupting pumping. Samples collected for volatile organics analysis will be collected using the lowest discharge rate possible (approximately 100 ml/min). The sequence of parameter collection will remain the same with volatile organic compounds being collected first, followed by semi-volatile organics, total metals, dissolved metals, and PCBs.

Monitoring wells containing LNAPLs will be sampled using a peristaltic pump for all parameters except volatile organics. Samples for volatile organic analysis will be collected with a small diameter dedicated Teflon bailer.

EQUIPMENT BLANKS

Since the purpose of equipment blanks is to assess the cleanliness of the sampling equipment, samples collected entirely with dedicated sampling equipment will not require collection of equipment blanks. All dedicated sampling equipment will be stored in the monitoring well, preventing contamination of the sampling equipment from outside sources. However, samples collected with non-dedicated equipment, such as a peristaltic pump (and associated disposable tubing), will require the collection of equipment blanks. In addition, Burlington will continue to collect all other field QC samples required in the RFI Work Plan.

# REFERENCES

U.S. Environmental Protection Agency. 1992. RCRA Groundwater Monitoring: Draft Technical Guidance, Office of Solid Waste.

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